

## AMENDMENTS TO THE CLAIMS

Claim 1 (original) A printer comprising:

a housing;

5 a track installed within the housing;

a carriage moveably installed on the track;

a print head installed on the carriage for ejecting ink  
onto a medium;

10 a position detecting mechanism comprising a first portion  
installed at a calibration position neighboring the  
track, and a second portion installed on the carriage;  
and

control circuitry for controlling operations of the printer  
and recording the calibration position at the track,  
15 the control circuitry comprising a counter for recording  
a counted position of the second portion of the position  
detecting mechanism;

wherein the calibration position is within a range which  
the print head is capable of printing the medium, and  
20 the second portion is capable of passing by the first  
portion when the print head simultaneously ejects ink  
onto the medium.

Claim 2 (original) The printer of claim 1 wherein the second  
25 portion comprises a light source and a light sensor installed  
on the carriage, the first portion comprising a shield  
installed on the housing for shielding light transmitted  
from the light source to the light sensor.

30 Claim 3 (currently amended) The printer of claim 2 wherein  
a first edge of the shield corresponds to ~~the~~ a first  
calibration position ~~neighboring the track~~; and when the  
light source and the light sensor on the carriage move to  
a the first calibration position which the shield starts  
35 to shield the light transmitted from the light source to  
the light sensor, the control circuitry will compare the

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position of the light source and the light sensor  
corresponding to the track counted by the counter with the  
first calibration position recorded by the control circuitry  
to obtain a first difference of the two positions;  
wherein a second edge of the shield corresponds to a second  
calibration position; and when the light source and the  
light sensor on the carriage move to the second calibration  
position which the light sensor starts to receive the light  
transmitted from the light source again, the control  
circuitry will compare the position of the light source  
and the light sensor corresponding to the track counted  
by the counter with the second calibration position recorded  
by the control circuitry to obtain a second difference of  
the two positions.

Claim 4 (cancelled).

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Claim 5 (original) The printer of claim 1 wherein the first  
portion comprises a light source and a light sensor installed  
on the housing, the second portion comprising a shield  
installed on the carriage for shielding light transmitted  
from the light source to the light sensor.

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Claim 6 (original) The printer of claim 5 wherein the light  
source and the light sensor correspond to the calibration  
position of the track; and when a first edge of the shield  
moves to a position which the shield starts to shield the  
light transmitted from the light source to the light sensor,  
the control circuitry will compare the position of the first  
edge of the shield corresponding to the track counted by  
the counter with the calibration position recorded by the  
control circuitry to obtain a difference of the two  
positions.

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Claim 7 (original) The printer of claim 5 wherein the light  
source and the light sensor correspond to the calibration

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position of the track; and when a second edge of the shield moves to a position which the light sensor starts to receive the light transmitted from the light source again, the control circuitry will compare the position of the second edge of the shield corresponding to the track counted by the counter with the calibration position recorded by the control circuitry to obtain a difference of the two positions.

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Claim 8 (original) The printer of claim 1 wherein when printing the medium, if a difference between the position of the second portion corresponding to the track recorded by the counter and the position of the calibration position at the track recorded by the control circuitry is within a first predetermined range, the control circuitry does not need to calibrate the position of the carriage.

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Claim 9 (original) The printer of claim 8 wherein when printing the medium, if the difference between the position of the second portion corresponding to the track recorded by the counter and the position of the calibration position at the track recorded by the control circuitry is between the first predetermined range and a second predetermined range, the control circuitry will calibrate the position of the carriage after the medium is printed.

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Claim 10 (original) The printer of claim 9 wherein when printing the medium, if the difference between the position of the second portion corresponding to the track recorded by the counter and the position of the calibration position at the track recorded by the control circuitry is greater than the second predetermined range, the control circuitry will instantly stop printing the medium to calibrate the position of the carriage.

Claim 11 (original) The printer of claim 1 further comprising

a step motor for driving the carriage wherein the counter counts rotational steps of the step motor to record the position of the second portion corresponding to the track.

5 Claim 12 (original) The printer of claim 1 further comprising:  
a DC motor for driving the carriage;  
an optical ruler installed on the housing;  
a light source installed on the carriage for emitting light  
toward the optical ruler; and  
10 a light sensor for detecting the light emitted by the light  
source through the optical ruler and generating  
corresponding position signals;  
wherein the counter uses the position signals generated..  
by the light sensor to record the position of the second  
15 portion corresponding to the track.

Claim 13 (original) A printer comprising:  
a housing;  
a track installed within the housing;  
20 a carriage moveably installed on the track;  
a print head installed on the carriage for ejecting ink  
onto a medium;  
a position detecting mechanism comprising a first portion  
installed at a calibration position neighboring the  
25 track, and a second portion installed on the carriage,  
the calibration position being within a range the print  
head is capable of printing the medium, the second  
portion being capable of passing by the first portion  
when the print head simultaneously ejects ink onto the  
30 medium; and  
control circuitry for controlling operations of the printer  
and recording the calibration position, the control  
circuitry having a counter for recording a counted  
position of the second portion of the position detecting  
35 mechanism;  
wherein when a difference between the counted position of

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these second portion and the calibration position recorded in the control circuitry is larger than a predetermined threshold, the control circuitry calibrates the position of the carriage.

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Claim 14 (original) The printer of claim 13 wherein the second portion comprises a light source and a light sensor installed on the carriage, the first portion comprising a shield installed on the housing for shielding light transmitted from the light source to the light sensor.

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Claim 15 (original) The printer of claim 13 wherein the first portion comprises a light source and a light sensor installed on the housing, the second portion comprising a shield installed on the carriage for shielding light transmitted from the light source to the light sensor.

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